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# In This Issue

## Special Feature: Biogeography of Disease

Both the disciplines of biogeography and disease ecology have much to offer each other, although currently these are scientific communities with little overlap. **Sam Scheiner** introduces our Special Feature on the Biogeography of Disease. He guides us through these interdisciplinary examples and case studies, as well as theories and concepts raised by the authors in this feature. **Rosenthal** starts off with a synthesis of recent discussions around the topic of climate change and disease emergence, framing them in the context of basic analytic approaches and the ecological and socioeconomic variables that govern them. **Pedersen and Davies** examine the patterns of shared pathogens, relatedness, and geographic overlap in primates, and create ''hotspot'' maps which highlight regions where the risk of disease transfer is greatest. **Guernier and Guégan** examine the geographical range size of human parasitic and infectious diseases at a global scale, while **Turmelle and Olival** evaluate predictors of viral diversity through a novel, multivariate analysis of ecological and behavioral host traits. **States et al.** investigate geographic variation in disease prevalence resulting from varying host community composition, and **Mundt et al.** develop a simple model of epidemic spread that may not only improve our understanding of the spread of emerging diseases, but facilitate their prediction and control.

## Life after Logging

Low-impact logging provides a promising avenue for biodiversity conservation, but can it also provide inroads for human diseases that impact endangered wildlife? **Gillespie et al.** explore whether a legacy of logging affects pathogen dynamics in free-ranging chimpanzees and lowland gorillas in the Republic of Congo. They studied patterns of infection with the pathogenic protozoa *Cryptosporidium* and *Giardia* in apes living in an undisturbed national park, and then compared them with infections among apes in an adjoining exploited logging concession. A comparative analysis showed no difference in infection rates between these areas, suggesting that low-intensity logging might have a future alongside healthy ape populations.

## Amphibian Declines

Chytridiomycosis is a disease of amphibians caused by the fungus *Batrachochytrium dendrobatidis* (*Bd*), and it has contributed to worldwide amphibian declines. In tadpoles, *Bd* infections commonly result in mouthpart deformation and lethargy. **Venesky et al.** found that tadpoles infected with *Bd* are less active and less efficient while foraging on algae, resulting in reduced food intake. This suggests a potential mechanism for decreased developmental rates of *Bd*-infected tadpoles. Given the high energetic costs of metamorphosis, *Bd*-induced reductions in growth rates during the larval period may negatively affect adult fitness. Most analyses about the geographical distribution of the chytrid fungus have been carried out on large geographical scales. In this issue, **Van Sluys and Hero** compare the prevalence and intensity of infection of chytrid within and outside rainforest habitats in southeast Queensland. Their results suggest that habitat influences chytrid prevalence, and open areas may provide a thermal refuge from chytrid-induced population declines.

## To Eat or Not Eat Turtle?

Although there is growing evidence that consuming sea turtles may be harmful to human health, many people may be unaware of this information. **Senko et al.** examine the knowledge and perceptions of local residents and physicians regarding sea turtle consumption in northwestern Mexico. They found that generally physicians regard sea turtle consumption as harmful, while residents do not. Both groups were unable to identify specific health hazards. These results suggest that residents lack the necessary knowledge to make informed dietary decisions, and physicians do not have accurate information to effectively communicate risks with their patients.

## Getting Back to Nature in Everyday Urban Life

Cities are not generally considered functioning ecosystems. With the majority of human population now living in urban environments, it may be time to reassess how to include nature in cities for the improvement of public and ecosystem health. **Maller et al.** present a call to action for researchers from various socio-ecological disciplines to take a fresh look at improving the quality of, and access to, nature in urban environments. Drawing on two related research projects, the authors discuss the potential health and well-being benefits arising from contact with nature in schools and residential housing.

## Social–Ecological Health Assessment for the Three Gorges Dam

The Three Gorges Dam is the largest in the world, and resulted in major modification to the ecosystems and livelihoods in the Yangtze River basin. In their review, **Kittinger et al.** assess how the Three Gorges Dam has re-shaped linkages between ecosystems and human health in complex ways. The authors review four primary categories of health–environment relationships, including toxicological impacts, shifting infectious disease dynamics, natural hazards, and social health. Their analysis highlights the importance of integrating ecological and health impact assessment processes for accurate evaluation of the costs and benefits of major development projects.

## Heavy Metal, Heavy Topic: Infant Mortality and Manganese

Manganese is a heavy metal necessary for life in trace amounts. Although it might be associated with infant mortality, this has not been evaluated in large populations. **Spangler and Spangler** initiated a pilot ecological study to evaluate groundwater manganese levels and infant mortality in all 100 North Carolina counties. The authors found a strong correlation between groundwater manganese concentration levels and increases in infant death rates. This study is the first to show, on a statewide basis, infant mortality effects of environmental manganese.

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